



The University of Georgia
College of Agricultural and Environmental Sciences
Cooperative Extension Service

Residential Rain Garden Design

Large Trees

• Bald Cypress	<i>Taxodium disticum</i>	south GA native
• Black Gum	<i>Nyssa sylvatica</i>	native
• Ginkgo	<i>Ginkgo biloba</i>	non-native
• Green Ash	<i>Fraxinus pennsylvanica</i>	native
• Loblolly Pine	<i>Pinus taeda</i>	native
▪ Overcup oak	<i>Quercus lyrata</i>	native
• Persimmon	<i>Diospyros virginiana</i>	native
• Red Maple	<i>Acer rubrum</i>	native
• River Birch	<i>Betula nigra</i>	native
• Sugar Hackberry	<i>Celtis laevigata</i>	native
• Willow Oak	<i>Quercus phellos</i>	native

Small Trees

• Crape Myrtle	<i>Lagerstroemia indica</i>	non-native
• Dahoon Holly	<i>Ilex cassine</i>	south GA native
▪ Devilwood	<i>Osmanthus americanus</i>	south GA native
• Fringetree	<i>Chionanthus virginicus</i>	native
▪ Musclewood, Ironwood	<i>Carpinus caroliniana</i>	native
▪ Red buckeye	<i>Aesculus pavia</i>	south GA native
▪ Serviceberry	<i>Amelanchier arborea</i>	native
▪ Southern sugar maple	<i>Acer barbaturn</i>	native
• Sweetbay Magnolia	<i>Magnolia virginiana</i>	native
• Green Hawthorn	<i>Crataegus viridis</i>	native

Shrubs

• American Beautyberry	<i>Callicarpa americana</i>	native
• Anise	<i>Illicium parviflorum</i>	south GA native
• Arrowwood	<i>Viburnum dentatum</i>	native
• Bottlebrush Buckeye	<i>Aesculus parviflora</i>	south GA native
• Buttonbush	<i>Cephalanthus occidentalis</i>	native
• Devil's walking-stick	<i>Aralia spinosa</i>	native
• Elderberry	<i>Sambucus canadensis</i>	native
• Florida leucothoe	<i>Agarista populifolia</i>	south GA native
• Inkberry	<i>Ilex glabra</i>	south GA native
• Oakleaf Hydrangea	<i>Hydrangea quercifolia</i>	native in western GA
• Possumhaw	<i>Ilex deciduas</i>	native
• Red chokeberry	<i>Aronia arbutifolia</i>	native
• Silky dogwood	<i>Cornus amomum</i>	native
• Strawberry bush	<i>Euonymus americanus</i>	native
• Summersweet Clethra	<i>Clethra alnifolia</i>	south GA native
• Swamphaw	<i>Viburnum nudum</i>	native
• Swamp rose	<i>Rosa palustris</i>	native

- Virginia Sweetspire Itea virginica native
- Wax Myrtle Morella cerifera south GA native
- Winterberry Ilex verticillata native

Herbaceous Perennials

- Asters Aster spp. – A. pilosus, A. patens, A. dumosus
- New England Aster Aster nova-angliae
- English Countryside Aster Aster nova-angliae native further north
- Blackeyed Susan Rudbeckia hirta ‘Indian Summer’ cultivar of native
- Blue Lobelia Lobelia native
- Laguna Compact Blue with Eye Lobelia native
- River Oats Chasmanthium latifolium native
- Cardinal Flower Lobelia cardinalis native (*needs water in severe dry conditions*)
- Goldenrod S. nemoralis, S. odora, S. speciosa, native
- Goldenrod Fireworks cultivar S. rugosa native
- Ironweed Vernonia noveboracensis native(*needs water in severe dry conditions*)
- Joe Pye Weed Eupatorium fistulosum native (*needs water in severe dry conditions*)
- St. Johns Wort Hypericum fasciculatum south GA native
- Swamp Milkweed Asclepias incarnata native further north/west
- Royal Fern Osmunda regalis native (*needs water in severe dry conditions*)
- Cinnamon Fern Osmunda cinnamomea native (*needs water in severe dry conditions*)
- Canna Lilies Canna x generalis (‘Pink Sunburst’ non-native)
- Soft rush Juncus effuses native
- Corkscrew Rush Juncus effusus (‘Spiralis’ Rush cultivar of native)
- Little bluestem Schizachyrium scoparium native (cultivars “The Blues”)
- Indiangrass Sorghastrum nutans native
- Switchgrass Panicum virgatum native (cultivars “Heavy Metal”, “Cloud Nine” & others)

Rain Garden Design

- Design it to handle a 1.25 inch rain event (this captures 80% of rainfall events)
- Square footage x 1.25 in. (or .104 ft) = X cu ft of water

Example

60 x 30 = 1800 sq. ft.

1800 sq. ft. x .104 ft. of rain (1.25 in rain)=

187 cu. Ft. of water

Just for Fun

187 cu. ft. of water x 7.48 = 1398 gallons

- Locate the rain garden down slope from any buildings
- Away from large trees (easier digging)
- In areas that take advantage of natural slope.
- Consider the size and placement in the landscape design. It may be easier to create two separate rain gardens
- For large projects it may be easier to hire a landscaper.
- For smaller projects use the excavated soil to build a berm on the downhill side of the garden.
- Use a rope or water hose to layout the edge of the garden.
- For deep gardens set aside the top 4-6 inches of soil (topsoil), excavate the hole then use the top soil

to backfill the planting area.

- Do a perk test. Dig an 8 by 8 inch hole 8 inches deep and fill with water. If it takes more than 8 hours to drain then the soil needs to be amended.
- On poorly drained soil excavate 10-12 inches of soil from hole, mix 3-6 inches of coarse sand or small gravel with excavated soil and replace into rain garden.
- Bring 2 cups of soil to Extension Office for soil test (\$8 fee, results in two weeks)
- Add lime and fertilizer according to soil test results, 3-6 inches of organic matter then till to a depth of 6 inches.
- Determine sun exposure
 - Full sun = 6 or more hours of direct sun
 - Part Sun to Part Shade=
 - less than 6 hours of direct sun
 - Shade = virtually no direct sun
- Don't forget specific site problems
 - Deer!
 - Plants will need to be watered until established


Plants to Avoid Using in the Rain Garden

- Those Susceptible to Root Rots
 - Azaleas
 - Junipers
 - Indian Hawthorn
 - Chinese Privet
- By all means MULCH!!!!
 - A minimum of 2" needed
 - Keeps weeds down
 - Acts as sponge to capture heavy metals, oils and grease
 - Holds moisture
 - Maintains even temperature
 - Shredded hardwood mulch or pine straw recommended
- The planting plan design should include species that tolerate extremes.
- Rain gardens can be left to evolve into a natural wild condition.
- Native plants are best adapted to local climate and once established are generally low maintenance.
- When planted with native species rain gardens can have additional value as a wildlife habitat.
- Shrub, trees, and ground covers absorb up to 14 times more rainwater than a grass lawn.

Sources for More Information

[Http://www.cleanwatercampaign.com](http://www.cleanwatercampaign.com)

[Http://ugatrial.hort.uga.edu/AboutUGATrial.asp](http://ugatrial.hort.uga.edu/AboutUGATrial.asp)

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